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Department of International Business Administration, College of Applied Sciences – Rustaq Ministry of Higher Education, Rustaq, Sultanate of Oman

**Contents**

**2019, Vol.1, Issue.7**

**The Change of Accountant's Role in Enterprise Resource Planning (ERP) System**

Dao Nhat Minh, Dao Quyet Thang  
pp.1-5

**Analysis The Influence Degree of Factors to Develop the Supporting Industry: Research in Thai Nguyen Province, Vietnam**

Duong Quynh Lien  
pp.6-12

**The Influence of Co-Worker Relationship on Turnover Intention of Employees in Food and Beverage Industry in Nigeria**

R. I. Adeghe, B. A. Chukwu  
pp.13-31

**An Analysis of Factors Influencing Income of Households Producing Lychee Bearing Geographical Indications in VIETNAM**

Nguyen Quang Hau, Le Thi Yen  
pp.32-39



## The Change of Accountant's Role in Enterprise Resource Planning (ERP) System

**Dao Nhat Minh**

Quy Nhon University, Viet Nam

**Dao Quyet Thang**

Quy Nhon University, Viet Nam

### Abstract

Enterprise resource planning systems (ERPS) have made waves the ability of the business to make a decision, manage business resources, or provide reasonable information for people who need information about the business. Many researches have conducted about ERP and accounting in ERP environment. However, the researches about accountants and the role of accountants in ERP are still a limit. In this paper, we will discuss accountant aspect in the ERP environment. Using discussion groups and Descriptive Statistics method, we found out the effects of an ERP system on the role of accountants.

**Keywords:** Enterprise resource planning systems, accountant, ERP.

### 1. Introduction

ERP (Enterprise resource planning) is the system designed to enhance the business's capacity. ERP has many definitions which depend on the researcher's perspective. Davenport (1998) defines the ERP as a commercial software package that integrates all the information flowing in the financial area, accounting, human resources, supplier control, and customer management. The other researchers have their own definitions such as "ERP systems are configurable information systems packages that integrate information and information-based processes within and across functional areas in an organization" (Kumar & Van Hillsgersberg, 2000). "One database, one application and a unified interface across the entire enterprise" (Tadger, 1998). "ERP systems are computer-based systems designed to process an organization's transactions and facilitate integrated and real-time planning, production, and customer response" (O'Leary, 2001). However, there is not much difference between these definitions (M. Al-Mashari et al, 2003).

The ERPs were considered one of the most significant developments made in the field of information technology in the 90s. This system type became a very popular type of software in the corporate/organizational environment. ERP system brings great impact on accounting field as well as the role of accountants. It has replaced or consolidated many works of accountants. This may change the nature of their job. If the accountants in the businesses which is adopted ERP realize these changes, they can have the best preparation for their job.

Although the number of studies about the impact of ERP on the role of accountants has grown in recent years, it's still a limit. Desormeaux (1998) concluded that ERP implementation raises the role and position of the accounting department and accountants because accountants are considered information providers and analysts for other departments after ERP implementation, not bookkeeper as it used to. But there is insufficient data in this aspect of accounting in ERP environment. So it is difficult to draw any conclusions on this matter. Therefore, it is important for us to explore how the ERP system affects the role of accountants. Using literature review; discussion groups method with Interviewees are the experts in theory and practical ERP; and Descriptive Statistics with about 300 samples, we found out the changes in the role of accountants in the ERP environment.

## **2. Literature Review**

Many researches about ERP have conducted from the 2000s which cause too many efforts to conduct an overall review. In one research attempting to make a whole picture about the researches about ERP, Tingting Huang and Kazuhiko Yasuda (2016) suggested some gaps and future trends in studies about ERP can be recognized. First, the research on SMEs will continuously increase. Many new ERP vendors especially in developing countries are providing more and more economical product that can be easily implemented and maintained by SMEs. The potential shorter life cycle in SMEs makes them better samples to address more operating issues. Second, research focused on a certain industry is insufficient. Management in the different industry varies a lot, so are the ERP systems that adopted by organizations in a different industry. Third, research on adopting the different types of ERP can be paid more attention to. New types of ERP with distinctive features are certainly emerging every year. On the contrary, research on this topic is hard to find.

This two authors also indicated what is happening and will happen in the post-implementation phase, especially, in the retire stage, needs more efforts to be found out. Quality data about utilization, transformation, replacement, etc., in organizations should be focused on as well as accumulation of long-term data in one particular organization. Since the longest time in ERP implementation course is the post-implementation period, there must be enormous issues that we have not been aware of. Specifically, differences also will generate from distinguishing industry, nation, scope, etc. The new type of ERP is thriving; however, very little empirical research.

About the impact of ERP system on accountants, all studies have confirmed the implementation of ERP will change the role of accountants. The relationship between the accountant and technology such as ERP systems shows connected together (Mike Newman and Chris Westrup, 2005). The accountant has been changed due to the implementation of ERP, from a traditional role (focus on accounting activities) to a higher role that are consultants and analysts (Scapens and Jazayeri, 2003). However, different accountant positions, the change will be different. In particular, the biggest change is in the management accountant and personnel of internal control. The role of the financial accountant will not change much (Hsueh-Ju Chen et al, 2011). Ariela Caglio (2003) also said that implementation of the ERP system will lead to the emergence of a new position "hybrid accountant" - is a combination of the accountant and other professional groups. In the environment of ERP, the management accountant has not only the accounting expertise, knowledge about the business and operational processes of the organization, but also must prepare themselves with the skills needed to meet the demand of work in the new context as communication skills to explain the results of the analysis with the management, influencing and persuading managers, IT skills to use the ERP system in the best way (Sayed, 2006). The research in this is of ERP mainly use qualitative methods.

### 3. Research design

After the literature review, we will use the group discussion to determine the impact of the ERP system to the role of accountant through the share of views. The group discussion is used because (1) allowing many participants to involve in; (2) creating an interactive environment: discussion and debate help develop new ideas, providing detailed information for the aspects of the matter.

The Samples was selected for the group discussion is a theoretical sample. The theoretical sampling procedure was conducted by selecting each object studied until the saturation point is reached. The paper is expected to perform group discussion with: (1) the researcher in ERP field (2) ERP system's consultants and vendors, (3) the chief accountant or manager in firms using ERP. This is the group of people has solid expertise or practical experience of ERP systems. The discussion group will stop collecting data when reaching saturation or tipping point, that is meaning at this point, there is no more new information to continue for the next discussion. 9 experts were selected to participate in the group.

The quantitative method is used after the group discussion is done. The purpose of this step is to confirm what is found in the qualitative method. The sample is about 300 accountants in the Viet Nam firms which adopted ERP system over 1 year. Descriptive Statistics of the quantitative method is used.

### 4. Research results and analysis

The result of the group discussion discovered three impacts of ERP system on accountants, it included:

ROLE1: ERP system enhances the role of accountants in the firms, from the bookkeeper to consultants and analysts.

ROLE2: ERP system creates the tight connection of the accountants in professional activities.

ROLE3: ERP system links accountants' activities with other relevant modules throughout the company.

Descriptive Statistics is used in the next step to confirm what found out in the group discussion. The questionnaire sent through Google form, mail or face to face. A total of 300 questionnaires were sent, after collecting and checking, the 18 votes eliminated by providing heterogeneous information, inappropriate firm to participate in a survey or do not reply enough number of questions. Thus, the final sample was 282 units.

The majority of respondents is the chief accountant (78%), the others are directors (22%). Experience in using ERP systems of respondents is all over 3 years. The portion of gender is male (65%), women (35%). The Age over 30 is a large proportion of 80%, under 30 is 20%.

**Table 1. Statistic of basic information**

Category	Portion	
Position	78%	The chief accountant
	22%	Director
Experience in using ERP systems	100%	> 3 years
Gender	65%	Male
	35%	Female
Age	80%	> 30
	20%	<= 30

**Table 2. Descriptive Statistics**

	Mean	Std. Deviation
	Statistic	Statistic
ROLE1	3,33	,736
ROLE2	3,33	,751
ROLE3	3,29	,745

Table 2 shows us Mean and Std. Deviation of three impacts of ERP system on accountants. Mean of three impacts is all higher than 3, this shows the extent of the consensus of respondents about the impact of ERP system on accountants quite high. Std. Deviation, the criteria used to consider the difference of the value of each observation compared with the average value, also are in the range from 0.6 to 0.7. Therefore, we can see the range of the observed variables in the scale is not large, in other words, the value of the survey is stable.

So we can conclude ERP system affect the role of accountants 3 aspects: enhancing the role of accountants in the firms, creating the tight connection of the accountants in firms and linking accountants' activities with other relevant modules throughout the company.

## 5. Conclusion

As ERP implementation begins, IT replaces highly repeated traditional accounting operations. Under successful ERP implementations, data quality increases, decision making is improved, and the percentage of reports automatically generated by the ERP system is greater than under the traditional ISs. Many reports produced automatically by ERP system were previously prepared by the accountants using other software, such as spreadsheets. Therefore, besides compiling data and preparing financial statements, accountants need to enhance communication and analytical ability and to familiarize with working processes in the company. Because of the complete records of transactions and clear audit trail of ERP systems, accountants can utilize the drill down function to track down every transaction in order of general ledgers, sub ledgers and transactions to improve the auditing of the company. This will strengthen its internal control to reinforce its corporate governance. After ERP implementation, the focus of internal control has shifted from accounting operation to the whole business operations. Traditional auditing emphasizes on the results such as signature and documentation instead of the causes. While the whole business auditing stresses on processes and procedures. Accountants play critical roles on effectively promoting business core value.

This paper helps accountants realize the impact of ERP system on accountants, so they can be aware of what kind of skill they need to have after ERP implementation. The research limitation of this paper is the data we obtained are mainly from Binh Dinh province, Viet Nam. Therefore, we are unable to consider the effects of ERP system on accountants in larger regions in Viet Nam such as: Ho Chi Minh City, Ha Noi, or Da Nang...We suggest future study expand the sampling scope and compare the difference in different industries and regions.



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## **Analysis The Influence Degree of Factors to Develop the Supporting Industry: Research in Thai Nguyen Province, Vietnam**

**Duong Quynh Lien**

Thai Nguyen University - College of Economics and Techniques

### **Abstract**

This study was conducted to analyze the influence degree of factors to develop supporting industry in Thai Nguyen province, Vietnam. Data for the study were collected from the survey of 116 supporting industrial enterprises operating in Thai Nguyen province. The analysis of the results showed that, the factors: Human resources, science and technology, capital, infrastructure, product consumption market has an influence on development of supporting industry, however, the degree of influence is different. On the basis of that analysis, the author proposes some recommendations to contribute to the development of supporting industry in Thai Nguyen province, Vietnam.

**Keywords:** Supporting industry, development, Vietnam

### **1. Introduction**

Vietnam is being placed in a general context: globalization and regionalization is going strong, the fourth Scientific and Technological revolution is taking place, Vietnam itself is also transforming the development model in width to depth (from exploitation of mineral resources, take advantage of cheap labor trans to economic development mainly based on high productivity, using effectively resources and using advanced and modern science and technology.)

Along with the trend of developing industrial parks of the country as well as Northern midland and mountainous of Vietnam, Thai Nguyen province has advocated the synchronous construction of industrial parks in the overall socio-economic development plan of the country. In the end of 2016, Thai Nguyen province has six concentrated industrial parks: Song Cong 1, Song Cong 2, Nam Pho Yen, Tay Pho Yen, Quyet Thang and Diem Thuy. These industrial parks have been formed and developed, contributing to economic restructuring, creating jobs for thousands of workers, developing the supporting and service industries of the province.

In the end of 2017, 182 projects have been granted investment certificates for industrial parks in the province with a total registered investment capital about USD 7,061 billion and about VND 14,192.72 billion; total implemented investment capital is about USD 6.4 billion and VND 7540.3 billion. [Source: Thai Nguyen Industrial Zone Authority].

In addition, the province is focused and invested in industrial development, leading to great demand about raw materials for production. For years, most enterprises in Thai Nguyen province use imported materials to produce finished products. Supporting industry in Thai Nguyen province in particular and in country in general has not met the demand about raw materials and accessories for domestic production both in quantity and quality. The above situation comes partly from objective reasons, that is the industry in Thai Nguyen province is still fledgling, the supporting industry is mainly based on foreign direct investment enterprises come to Thai Nguyen to rent premises, labors producing export products with most imported materials. However, the lack of investment planning to develop supporting industries as well as the lack of policies to encourage the development of supporting industries of the Central Committee for a long time, it is the main reason that the supporting industries in Thai Nguyen province in particular and in the country in general are underdeveloped. The dependence on imported raw materials and the underdeveloped supporting industry has influenced the growth quality of industries in Thai Nguyen province.

With that position, supporting industry not only receives the attention of policy makers but also receives the attention of researchers in the world as well as in the country. Research related to this area are aimed at clarifying issues related to supporting industry, namely, the concept of supporting industries in different countries and regions (Dung et al., 2014). Moreover, implementing research towards developing support industries, factors affecting the development of supporting industries. Some studies focus on analyzing policies affecting industrial development in general, investment in industrial development (Pham Thi Anh Nguyet (2014), Jackson and colleagues (1999)).

Therefore, studying the influence degree of factors to develop supporting industry is necessary.

## **2. Research overview**

Supporting industry receives the attention not only of researchers but also of policy makers, the factors affecting supporting industry development are summarized as follows:

**Table 1. Summary table about factors affecting development of supporting industry**

Items	Author / year
Infrastructure system	Kamunge et al(2014); Trinh Duc Chieu et al(2010);
Supporting industrial development policy	Kamunge et al (2014); Bouazza et al (2015); Abrar-ul-haq et al (2015); Trinh Duc Chieu et al (2010); Quoc Nghi et al (2011); Phan Thi Minh Ly (2011);
Human resources	Ghosh et al (2011); Kamunge et al(2014); Bouazza et al(2015); Abrar-ul-haq et al(2015); Trinh Duc Chieu et al (2010); Do Thi Thu Thuy (2017); Vu Chi Loc (2010), Luu Tien Dung et al(2014)
Product consumption market	Chittithaworn et al (2011); Ghosh et al (2011); Kamunge et al (2014); Bouazza et al (2015); Abrar-ul-haq et al (2015); Trinh Duc Chieu et al (2010); Nham Tuan et al (2016); Do Thi Thu Thuy (2017); Vu Chi Loc (2010), Luu Tien Dung et al (2014).
Capital (financial resource)	Chittithaworn et al (2011); Ghosh et al (2011); Kamunge et al (2014); Kamunge et al (2014); Bouazza et al (2015); Abrar-ul-haq et al (2015);

	Phan Thi Minh Ly (2011);
Science and technology	Ghosh et al (2011); Kamunge et al (2014); Bouazza et al (2015); Abrar-ul-haq et al (2015); Trinh Duc Chieu et al (2010); Phan Thi Minh Ly (2011); Nham Tuan et al (2016); Do Thi Thu Thuy (2017)
International integration	Chittithaworn et al (2011); Phan Thi Minh Ly (2011); Đỗ Thị Thu Thủy (2017); Vũ Chí Lộc (2010), Luu Tien Dung et al (2014)
Political, cultural and social	Kamunge et al (2014); Trinh Duc Chieu et al (2010); Vu Chi loc (2010), Luu Tien Dung et al (2014)

*Source: Author's summary*

### **3. Research Methodology**

Primary information was collected from interviews with representatives of 116 enterprises in the supporting industry and related industries to supporting industries in Thai Nguyen province by the use of questionnaires. Research conducted to send survey forms to representatives of enterprises, in case of not meeting the representative of the enterprises; the author sent the survey form or sent an email and made an appointment a week later to return to receive the survey

With 116 enterprises that collected data to meet the minimum requirements of performing statistical operations.

After cleaning the data, the author performed OLS regression to analyze the influence of factors on supporting industry development in Thai Nguyen province, Vietnam under the help of SPSS 20.0 software.

### **4. Research findings**

Dependent variable (Y): Results of investment in supporting industry development in Thai Nguyen province.

Independent variables:

- + Human resources (LD):
- + Supporting industrial development policy (CSPT)
- + Capital (V):
- + Product consumption market (TTTT):
- + Political, cultural and social
- + Infrastructure system (HT):
- + International integration (HN):
- + Science and technology (KHCHN):

Research results are as follows:

**Table 1: Testing the level of model interpretation**

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.877 <sup>a</sup>	.770	.752	.452016626694024
a. Predictors: (Constant), V, HT, HN, CSPT, XH, KHCCN, LD, TTTT				

Source: Result analysis from the author's research data

The level of model interpretation, with adjusted R2 coefficient = 0.752, this indicates that about 75.2% of the variation of the dependent variable is explained by the independent variables in the model.

**Table 2: Testing the relevance of the model**

ANOVA <sup>a</sup>						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	73.014	8	9.127	44.669	.000 <sup>b</sup>
	Residual	21.862	107	.204		
	Total	94.876	115			
a. Dependent Variable: KQ						
b. Predictors: (Constant), V, HT, HN, CSPT, XH, KHCCN, LD, TTTT						

Source: Result analysis from the author's research data

With Sig coefficient = 0.000 the author's research model is suitable.

**Table 3: Regression results model**

Coefficients <sup>a</sup>								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-2.641	.375		-7.037	.000		
	LD	.231	.075	.174	3.075	.003	.676	1.480
	CSPT	.217	.047	.247	4.574	.000	.737	1.356
	HN	.239	.051	.222	4.724	.000	.974	1.027
	HT	.211	.050	.246	4.176	.000	.620	1.613
	KHCCN	.285	.056	.305	5.088	.000	.599	1.671
	XH	.186	.066	.155	2.817	.006	.714	1.401
	TTTT	.185	.067	.183	2.768	.007	.492	2.031
V	.163	.068	.142	2.419	.017	.629	1.589	
a. Dependent Variable: KQ								

Source: Result analysis from the author's research data

+ Human resources (LD): The coefficient of the labor variable 0.231 is positive (+) Indicates the relationship in the same direction of independent variables and dependent variables. When

assessing the local labor force increased by 1 point, the development result of supporting industrial enterprises will increase by 0.231 points.

+ Supporting industrial development policy (CSPT): The coefficient of CSPT variable 0.217 is positive (+) also shows the positive relationship of the independent variable and the dependent variable. When evaluating the supporting industry development policy by 1 point, the development result of supporting industrial enterprises will increase by 0.217 points.

+ International integration (HN): The analysis results show that the coefficient of the international integration variable is positive, express the relationship of independent variables and dependent variables, specifically, the coefficient of this variable is 0.239, indicating that when assessing international integration by 1 point, the development result of supporting industrial enterprises will increase by 0.239 points.

+ Infrastructure system (HT): The coefficient of the infrastructure system variable is 0.211 with positive sign (+) also shows the positive relationship of the independent variable and the dependent variable. When assessing infrastructure system by 1 point, the development result of supporting industrial enterprises will increase by 0.211 points.

+ Science and technology (Science and Technology): The analysis results show that the coefficient of scientific and technological variables is positive, expressing the reciprocal relationship of the independent variable and the dependent variable, namely the coefficient of this variable is 0.285 indicating that when evaluating science and technology increased by 1 point, the development result of industrial enterprises support will increase by 0.285 points.

+ Political, cultural and social (XH): The coefficient of XH variable 0.186 with positive sign (+) also shows the positive relationship of the independent variable and the dependent variable. When favorable political, cultural and social environment will contribute to the improving output result in a positive way of supporting industry enterprises..

+ Product consumption market (TTTT): The analysis results show that the coefficient of the consumption market variable is positive, showing the positive relationship of the independent variable and the dependent variable. Specifically, the coefficient of this variable is 0.185, which indicates that when evaluating the consumption market of the product increases 1 point, the development result of the supporting industry will increase by 0.185 points.

+ Capital (V): The analysis results show that the coefficient of the variable is positive, showing the positive relationship of the independent variable and the dependent variable, namely the coefficient of this variable is 0.163 indicating that when In assessing capital increase by 1 point, the development result of supporting industrial enterprises will increase by 0.163 points.

## **5. Conclusion**

Research findings have shown the difference in the influence degree of factors on supporting industry development, it seems that the science and technology and the integration factor have the greatest influence to develop supporting industry in Thai Nguyen province, Vietnam. Research findings are used as a basis for proposing recommendations to contribute to develop supporting industries in Thai Nguyen province.

## **6. Recommendations**

To develop supporting industries for Thai Nguyen province in the coming time, the solutions need to be implemented synchronously as follows:

Firstly, investing in developing infrastructure system

Secondly, ensuring capital sources for supporting industry development

Third, training human resources to meet the needs of enterprises in the supporting industry in the province

Fourth, investing and innovating in technological

Fifthly, strengthening international integration, facilitating the expansion of product consumption market

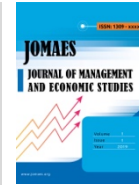
Eighth, taking advantage of local

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## The Influence of Co-Worker Relationship on Turnover Intention of Employees in Food and Beverage Industry in Nigeria

**Prof. R. I. Adeghe Ph.D**

Department of Banking and Finance, Igbinedion University, Okada, Edo State, Nigeria.

**Dr. B. A. Chukwu Ph.D**

Department of Business Administration, Igbinedion University, Okada, Edo State, Nigeria.

[benedictchukwu103@yahoo.com](mailto:benedictchukwu103@yahoo.com)

### Abstract

This research examined the influence of co-worker relationship on employee turnover intention in Food and Beverage Industry in Nigeria. Labour turnover cost, Nigeria Industry huge sum of money annually in hiring and training replacements. Retention of employee is not easy and is a complex issue, and there is no single recipe for retaining employees in a company. Management of food and beverage industry can reduce turnover by considering different preventive measures such as providing opportunity for co-workers and supervisors support during task accomplishment. Co-workers and supervisors support will increase employees ability to cope with their work and decrease turnover intention. Employees will opt out of the organization when they cannot get necessary assistance from their co-worker and supervisor. This research adopted a survey research instrument through the administration of questionnaire to three hundred and fifty five(355) staff of the sampled firm. The data for the research was analyzed using descriptive statistics and chi-square. The empirical results from the chi-square analysis showed that co-workers interactions, supervisor interactions, co-workers support and supervisor support with the employee has significant influence on employee turnover intention at 5 percent level of significance. Based on the findings of the research, it is recommended that employees should interact fully with their co-worker and supervisor to obtain the necessary support during task accomplishment.

**Keywords:** co-worker relationship, supervisor support, co-worker support, supervisor interaction, co-worker interaction, turnover intention.

### INTRODUCTION

Co-worker relationship is the extent to which employees perceived that co-worker offer them support, encouragement and concern. It is a social interaction that is supportive in both formal and informal relationships. Support from co-worker while performing their duty will allow employees to interact fully with their co-workers and obtain the necessary assistance (O'D'riscol & Cooper, 2002). Co-worker relationship is needed in organizational settings such as food and beverage industry.

In an organizational setting, such as food and beverage industry, co-worker relationship encompasses effective support such as love, and aid in work. (Burker, Borcki & Hurley, 1992; Freeze, 1999). Employees stay in organization when they perceive high co-worker relationship. This is because co-worker relationship help employee to realize their social emotional needs. Co-worker relationship also brings about enthusiasm and feelings of positive effect on employees (Bakker, Demerouti & Schaufeli, 2003). Support from supervisors, organization like food and beverage industry and co-workers will increase employee ability to cope with their work and decrease turnover intention. Food and Beverage employees will slack up in their duties when they do not perceive support from their supervisor and organization, and absenteeism will set in, followed by increase turnover (Marker, 2017).

The models of co-worker relationship are supervisory, peer support and kinship (Price, 2001). Price (2001) has evaluated these models in his work on employee turnover and found that supervisory and peer support has positive impact on job satisfaction and negative relationship with turnover intention. Food and Beverage staff will terminate their appointment if there is lack of support from organization, supervisor and mates, and also when there are interpersonal difficulties, lack of love, and respect, coupled with inability to offer direct help such as aid in work. Other supports which bother on emotion and appraisal of employee will be source of turnover when not fulfilled.

High staff turnover brings destruction to the organization in the form of direct and indirect costs and profitability (Roshidi, 2014). The direct costs are replacement costs, recruitment process cost for advertising, selection, interviewing, hiring, doing their orientation program (Gustafson, 2002). The indirect costs refers to the time consumed till the new employees gets acquainted with the new organization culture, system, his new job responsibilities (Gustafson, 2002).

Apart from the cost implications, staff turnover can reduce customers service, loyalty and cause psychological effects on employees (Oluwafemi, 2010). Staff turnover can disrupt organization strategic planning to achieve objectives when a critical employee is lost. (Oluwafemi, 2010; Capelli, 2008). Loss of an employee as a result of staff turnover can cause additional work stress and lower moral and motivation of employees that stay (Solomon, Hashim, Mehdi & Ajagbe, 2012).

### **Objective of The Study**

This research examined the influence of co-worker relationship on employee turnover intention. The specific objectives of the research are to:

- I. ascertain whether employees will intend to leave when they have good interaction with their co-workers.
- II. determine whether employee will intend to leave when they have good interaction with their supervisors.
- III. examine whether employee will intend to leave when they have support from their co-workers.
- IV. determine whether employee will intend to leave when they have support from their supervisor.

### **Research Questions**

- I. Will employee intend to leave when they have good interaction with their co-workers
- II. Will employee intend to leave when they have good interaction with their supervisors
- III. Will employee intend to leave when they have support from their co-workers

IV. Will employee intend to leave when they have support from their supervisor.

#### **Statement of Hypotheses**

The following hypotheses were formulated to guide this study.

##### **Hypothesis 1**

Hi: Employees will intend to leave when they have good interaction with their co-workers

Ho: Employees will not intend to leave when they have good interaction with their co-workers.

##### **Hypothesis 2**

Hi: Employees will intend to leave when they have good interaction with their supervisors

Ho: Employee will not intend to leave when they have good interaction with their supervisors

##### **Hypothesis 3**

Hi: Employees will intend to leave when they have support from their co-workers

Ho: Employees will not intend to leave when they have support from their co-workers

##### **Hypothesis 4**

Hi: Employees will intend to leave when they have support from their supervisors

Ho: Employees will not intend to leave when they have support from their supervisors

#### **Significance of the Study**

The study will be of help to the following stakeholders:

- i. The study would be of great interest and valuable to practicing managers especially Human Resource Managers and help them to reduce turnover intention and create savings in hiring and training replacements.
- ii. The study would be of great benefits to researcher in Business Administration and Managementrelated field as it would provide empirical evidence for further studies on the area of employee turnover.

#### **Scope of the Study**

The study examined the influence of co-worker relationship on employee turnover intention. The scope of the study would delimit to staff of Bottling Company in Nigeria. The study adopted a survey research design through the administration of structured questionnaires raised on a five point scale to the sampled respondents for the study.

#### **LITERATURE REVIEW**

##### **Turnover Intention**

Turnover intention is the intention of workers to quit their job role and organization (Price, 2001; Adeboye & Adegoye, 2012). Turnover intention is the best predictor of actual turnover, and actual turnover is expected to increase as the intention to turnover increase (Adeboye & Adegoye, 2012). Turnover intention is one of the main determinant of leaving behavior (Price 2001; Brigham, Castro & Shepherd, 2007). Therefore when employees intend to leave and if this is ignored, it will lead to high loss of employees. Loss of employees can cause psychological distress, reduced productivity, quality service, increased recruitment cost (Powell& York, 1992;

Oluwafemi, 2010). It can also lead to work overload, mistrust, disruption in workflow and further turnover (Chukwu; Josiah, Ogungbenle, & Akpeti 2012).

### **Co-worker Relationship and Turnover Intention**

Support from co-worker or supervisor leads to favourable outcome in organization such as reduced stress, turnover intentions, increased commitment, increased productivity and enhanced performance (Bakker, Demerouti & Schaufeli, 2003; Eisenberger, Stiglinhaber, Vanderberghe, Sucharski, & Rhoades 2002; Lee, 2004). Therefore it is expected that food and beverage company employees who perceived high social support on their job will be attached, committed, and dedicated to their job.

Marker (2007) stated that poor supervision is the main cause of turnover intention and that support from supervisors and organization will increase employee ability to cope with their work and decrease turnover intention. Employees will slack up in their duties when they do not perceive support from their supervisor and organization and absenteeism will set in followed by increase in turnover (Marker, 2007).

Bakker et al (2003) stated that co-worker relationship conveys feelings of energy, enthusiasm and that when employees receive high co-worker relationship, they become committed to the organization. They also opined that co-worker relationship help employee to realize their social emotional need such as affiliation. Rhoades, Eisenberger and Armeli (2001) found that organizational support is negatively related to voluntary turnover. Rhoades and Eisenberger (2002) in their research work on perceived organizational support noted that it is related to favorable outcomes such as job satisfaction.

Griffin, Paterson and West (2000) carried out a study on the effect of supervisor support on turnover intention in United Kingdom. The empirical studies were carried out on 48 companies throughout United Kingdom in the manufacturing sector. The objective of the study was to find out the relationship between supervisor support, job satisfaction and turnover intention. They found that a strong correlation exist between supervisor support and job satisfaction. And that when employees are satisfied with supervisor support, they become committed to the organization, and will not want to leave.

Aube, Rousseau and Morin (2007) carried out a research on the perceived organizational support and organizational commitment in North America. The survey was conducted in 239 employees of correctional service in North America. The objective of the study was to find the relationship between supervisor support and turnover intention. The research finding showed that supervisor support had negative relationship with turnover intention.

Goldstein and Rockert (1984) conducted a research on effect of job satisfaction on turnover intention on IT firm in U.K. He used the job diagnostic survey tool developed by Hackman and Oldman (1976). The objective of the study was to find out the relationship between social support, by peers and supervisor on job satisfaction and turnover intention. The research finding showed that social support by peers and supervisors are very important for employees satisfaction and have negative relationship with turnover intention.

Eisenberger et al (2002) conducted a study on the effect of perceived organizational support on turnover intention. The objective of the study was to find out the relationship between organizational support and turnover intention. They found that perceived organizational support mediated the relationship between perceived supervisor support and turnover intention. The finding suggested that perceived organization support is a mechanism through which the effect of supervisor support on turnover intention occur. Kraimer, Seibert, Wayne, Liden and Bravo (2011) also found that organizational support is positively related to job performance and

satisfaction when the organization offers development and career advancement, and that this reduce turnover intention.

Chung-chang, Sheng-Hswing and Chen (2016) conducted a research on the factors affecting turnover intention of hotel employees in Taiwan. The objective of the study was to find out the relationship between; job satisfaction, organizational commitment, co-worker relationship and turnover intention. The research finding showed that more humorous co-worker relationships between hostel employees and a higher level of satisfaction regarding their work environment have a significant positive effect on job satisfaction. The empirical results suggest that co-worker relationships and work environment have significant positive effect on job satisfaction. The study showed that co-worker relationships, salary level and organizational commitment in addition to work environment are important facets that influence employee turnover intention.

### **Social Exchange Theory**

Social exchange theory asserts that various exchange relationships exists between members of an organization (Cropanzano & Mitchel, 2005). Social exchange theory is an exchange process between parties, that is mutually contingent and mutually rewarding (Cropanzano & Mitchel, 2005). This theory was used by numerous studies to explain the relationship between a diversity of organizational aspect and employee behavior (Cropanzano & Mitchel, 2005). A sense of attachment and commitment toward the organization is built by high level of social exchange (Gould-William, 2007). Employees that have high positive perception of exchange relation are less likely to leave the organization (Gould-Williams, 2007). The social exchange theory is of the opinion that organizations and managers can provide organizational support to achieve desirable attitude and behaviors from employees (Gould – Williams, 2007, Gould – Williams & Davies, 2005).

Employees stay at their work when they are satisfied with their salary, career growth, training and development and performance appraisal in their organization (Abubarkar, Chanhan& Kura, 2014). Eisenberger, et al, (2002) argued that the greater employees satisfaction with organization support, the more likely they will feel a responsibility to reward their organization.

### **METHODOLOGY**

Survey research method was used in this study. It entails collection of data or information from specific population or sample through questionnaire instrument. Survey research method is use because the goal was to sample the opinion of the people on issues concerning the research. The population of the study comprised Staff of Bottling Company in Nigeria and was 3158. A sample of 355 was selected from this research using Yamane (1964) formular. A stratified random sampling technique was used to distribute sample to Bottling Company using stratum allocation technique of Kumar (1976). This sampling technique is considered most appropriate because it gives everybody in the population equal chance of being selected

Questionnaire was the measuring instrument. The Questionnaire was made up of five pointlikert scale ranging from 1 (strongly disagree with the statement) to 5 (strongly agree with the statement). The Questionnaire was self development of items. Demographic data was part of the Questionnaire. The validity and reliability of the Questionnaire was measured using Cronbach's Alpha. The reliability of the Questionnaire was 0.808. The values of 0.808 was above 0.7 which is within the acceptable limit in Social Science. This means that the data collected were valid and reliable for analysis.

A total of 355 Questionnaire were distributed to Staff of Bottling Company and 302 response were collected which has 85.07% response rate. Table and percentages were used to present and analyzed the data while chi-square was used to test the hypothesis.

**Pilot Test**

A pilot test was carried out on 40 respondents before questionnaire distribution in order to collect their comments, ensure simplicity and understanding of Questionnaire, which helped in developing the Questionnaire more efficiently. A favorable comment was obtained from the 40 respondents and the result of the pilot test ensured that the survey was understandable by the 40 respondents.

The reliability analysis was conducted on interaction with co-workers, interaction with supervisors, support from co-worker and support from supervisors. Table 1 showed the reliability analysis of the Questionnaire, and the results show that the reliability coefficient of the Questionnaire ranged from 0.712 – 0.897. The reliability of the Questionnaire was 0.808, this means that the data collected was valid and reliable enough to be used for analysis. A value above 0.7 is acceptable in social science.

**Table 1: Result of reliability analysis**

<b>Variables</b>	<b>Items</b>	<b>Cronbach's Alpha</b>
Interaction with co-workers	4	0.785
Interaction with supervisors	4	0.712
Support from co-workers	4	0.812
Support from supervisors	4	0.836
Turn over intention	4	0.897

Source: Authors computation, 2019

**DATA PRESENTATION, ANALYSES AND INTERPRETATION**

Data Presentation Analyses for Sample Background Variables.

A total of three hundred and fifty-five (355) questionnaires were given out to respondents and three hundred and two (302) were duly returned and usable, and subsequently analyzed, therefore, the response rate was 85.07%. The demography of the respondents was presented in the table below.

**Table 2: Demography of Respondents.**

<b>Responses</b>	<b>Frequency</b>	<b>Percentage (%)</b>
<b>Age:</b>		
Below	64	21.2
30-39 years	126	39.7
40-49 years	80	26.5
50 years and above	38	12.6
Total	302	100.0
<b>Sex</b>		
Male	208	66.9
Female	100	33.1
Total	302	100.0
<b>Educational Level:</b>		
Secondary	87	26.5
Post-Secondary	123	40.7
Polytechnic/University	99	32.8
Total	302	100.0

<b>Department</b>		
Accounting	36	11.9
Marketing	76	25.2
Administration	46	15.2
Production	89	29.5
Maintenance	55	18.2
Total	302	100.0
<b>Marital Status</b>		
Single	110	36.4
Married	192	63.6
Total	302	100.0
<b>Year of Service</b>		
Below 5 years	82	27.2
5-10 years	127	42.1
10-15 years	69	22.8
16years and above	24	7.9
Total	302	100.0
<b>Number of Time Change Job</b>		
2times and below	191	63.2
3- 4 times	81	26.8
5times and above	30	10
Total	302	100.0

**Source:** Authors Computation, 2019.

Table I above shows the age distribution of sampled respondents of whom, 64 (21.2%) of them were aged 30 years below, 120 (39.7%) were aged 30-39 years, 80 (26.5%) of them were aged 40-49 years, 38 (12.6%) were aged 50 years and above. This shows that majority of the respondents were aged 30-39 years. On the issue of sex of the sampled respondents, 202(66.9%) were males and 100 (33.1%) were females. This implies that majority of the respondents were males. On the educational level of the respondents who returned valid copies of distributed questionnaires of whom 80 (20.5%) of them attended secondary school, 123 (40.7%) of them attended post secondary school and 99 (32.8%) of them attended Polytechnic/University. This means that majority of the sampled respondents attended post-secondary school. Base on department, 36 (11. 9%) of the respondents were in accounting department, 76 (25.2%) of the respondents were in marketing department, 46 (15.2%) of the respondent, were in administration department, 89 (29.5%) of the respondents were in production department and 55 (18.2%) of the respondents were in maintenance department. On the issue of marital status of the sampled respondent, 110 (36.4%) of them were single and 192 (63.6%) of them married. This shows that majority of the respondents were married. On the year of service, 82 (27. 2%) had worked for the period of 5years and below, 127 (42.1%) had worked for the period of 5-10 years, 69 (22.8%) had worked for the period of 10-15 years and 24 (7.9%) had worked for the period of 16years and above. This shows that majority of the respondents had worked for the period of 5-10 years. On the number of times changed job, 191 (63.2%) of the respondents had changed job less than twice, 81 (26.8%) of the respondents had changed job for 3-4 times and 30 (10%) of the respondents had changed job for 5 times and above. This means that the majority of the respondents had changed job less than three times.

### **Test of Hypotheses**

Chi- Square formula was used as statistical instrument for testing the hypotheses.

Chi-Square Formula:

$$X^2 = \frac{(of-ef)^2}{ef}$$

Where of = observed frequency

ef = expected frequency

$\chi^2$  distribution is worked out by the value of its Degree of Freedom (df). Contingency table was also used to work out the expected frequencies.

**Decision Rule:** Reject the null (Ho) hypothesis and accept the research/alternate (Hi) hypothesis if the calculated ( $\chi^2$ ) value is greater than the table value.

$$\text{Expected Frequency } ef = \frac{\text{Row Total} \times \text{Column Total}}{\text{Grand Total}}$$

### Hypothesis 1

**Hi:** Employees will intend to leave when they have good interaction with their co-worker.

**Ho:** Employees will not intend to leave when they have good interaction with their co-workers.

**Tested Data:** Data collected and presented in table 3 was used to calculate the expected frequency.

**Table 3:** Whether respondent agree that employee will intend to leave when they have good interaction with their co- workers.

Responses	Frequency	Percentage
Agreed	92	30.5
Disagreed	190	62.9
Undecided	20	6.6
<b>Total</b>	<b>302</b>	<b>100</b>

**Source:** Field Survey 2019

The table shows the response of the respondents on whether respondents agree that employees will intend to leave when they have good interaction with their co-worker. 92 respondents representing 30.5 percent agreed that employees will intend to leave when they have good interaction with their co-worker. 190 respondents representing 62.9 percent disagreed while 20 respondents representing 6.6 percent were undecided on the issue.

**Table 4:** Contingency



<b>Responses</b>	<b>Male</b>	<b>Female</b>	<b>Total</b>
Agreed	60 (53.5)	20 (26.5)	80
Disagreed	121 (123.7)	64 (61.3)	185
Undecided	21 (24.7)	16 (12.3)	37
<b>Total</b>	<b>202</b>	<b>100</b>	<b>302</b>

Source: Author's computation, 2019

60 is the observed frequency of the number of males that agreed, while 53.5 is the expected frequency. 20 is the observed frequency of the number of females that agreed, while 26.5 is the expected frequency. 121 is the observed frequency of the number of males that disagreed while 123.7 is the expected frequency. 64 is the observed frequency of the number of females respondents that disagreed, while 61.3 is the expected frequency. 21 is the observed frequency of the males that were undecided while 24.7 is the expected frequency. 16 is the observed frequency of the females that were undecided while 12.3 is the expected frequency.

Expected Frequency Calculation.

Expected Frequency =  $\frac{\text{Roll Total} \times \text{Column Total}}{\text{Grand Total}}$

Roll 1 cell 1  $202 \times 80 \div 302 = 53.5$

Roll 1 cell 2  $100 \times 80 \div 302 = 26.5$

Roll 2 cell 1  $202 \times 185 \div 302 = 123.7$

Roll 2 cell 2  $100 \times 185 \div 302 = 61.3$

Roll 3 cell 1  $202 \times 37 \div 302 = 24.7$

Roll 3 cell 2  $100 \times 37 \div 302 = 12.3$

**Table 5: Chi- Square**

Of	ef	( of- ef )	( of – ef ) <sup>2</sup>	$\frac{( of – ef )^2}{ef}$
60	53.5	6.5	42.25	0.7897
20	26.5	- 6.5	42.25	1.5943
121	123.7	- 2.7	7.29	0.0589
64	61.3	2.7	7.29	0.1189
21	24.7	- 3.7	13.69	0.5542
16	12.3	3.7	13.69	1.1130
302				4.110

Source: Author's computation, 2019

of = observed frequency

ef = expected frequency

X<sup>2</sup> = Chi-square

$$X^2 = \frac{(of-ef)^2}{ef}$$

Where:

of is the observed frequency of the number of males and females that agreed, disagreed and are undecided on the issue

ef is the expected frequency of the number of males and females that agreed, disagreed and are undecided on the issue.

$x^2$  Value Calculated = 4.110

To find degree of freedom

$$df = (R-1) (C-1)$$

$$(3-1) (2-1)$$

$$3 \times 1$$

$$df = 3$$

At 3 Significant level the table value is 7.815.

**Decision Rule:** Reject  $H_0$  if the  $x^2$  calculated is greater than the table value and vice versa. Since the calculated value (4.110) is less than the table value (7.815), the null hypothesis is accepted and the alternate rejected. This therefore means that employees will not intend to leave when they have good interaction with their co-workers.

### Hypothesis 2

**Hi:** Employees will intend to leave when they have good interaction with their supervisors.

**Ho:** Employees will not intend to leave when they have good interaction with their supervisor.

**Tested Data:** Data Collected and presented in table 6 was used to calculate the expected frequency.

**Table 6:** Whether employees will intend to leave when they have good interaction with their supervisors.

Responses	Frequency	Percentage
Agreed	88	29.1
Disagreed	182	60.3
Undecided	32	10.6
Total	302	

**Sources:** Field Survey 2019

The table shows the response of the respondents on whether respondents agree that employee will intend to leave when they have good interaction with their supervisors 88 respondents representing 29.1 percent agreed that employees will intend to leave when they have good interaction with their supervisors. 182 respondents representing 60.3 percent disagreed while 32 representing 10.6 percent were undecided on the issue.

**Table 7: Contingency**

Responses	Male	Female	Total
Agreed	61( 56.2)	23 (27.8)	84
Disagreed	126 ( 124.4)	60 ( 61.6)	186
Undecided	15 (21.4)	17 (10.6)	32
Total	202	100	302

Source: Author's computation, 2019

61 is the observed frequency of the number of males that agreed, while 56.2 is the expected frequency. 23 is the observed frequency of the number of females that agreed, while 27.8 is the expected frequency. 126 is the observed frequency of the number of males that disagreed while 124.4 is the expected frequency. 60 is the observed frequency of the number of female respondents that disagreed, while 61.6 is the expected frequency. 15 is the observed frequency of the males that were undecided while 21.4 was the expected frequency. 17 is the observed frequency of the female respondents that were undecided while 10.6 is the expected frequency.

Expected frequency calculation

Expected frequency =  $\frac{\text{Roll Total} \times \text{Column Total}}{\text{Grand Total}}$

Roll 1 cell 1       $202 \times 84 \div 302 = 56.2$   
 Roll 1 cell 2       $100 \times 84 \div 302 = 27.8$   
 Roll 2 cell 1       $202 \times 186 \div 302 = 124.4$   
 Roll 2 cell 2       $100 \times 186 \div 302 = 61.6$   
 Roll 3 cell 1       $202 \times 32 \div 302 = 21.4$   
 Roll 3 cell 2       $100 \times 32 \div 302 = 10.6$

**Table 8: Contingency**

Of	ef	( of- ef )	( of – ef ) <sup>2</sup>	$\frac{(\text{of} - \text{ef})^2}{\text{ef}}$
61	56.2	4.8	23.04	0.4099
23	27.8	-4.8	23.04	0.8288
126	124.4	1.6	2.56	0.0206
60	61.6	-1.6	2.56	0.0416
15	21.4	-6.4	40.96	1.9140
17	10.6	6.4	40.96	3.8641
302				7.079

Source: Author's computation, 2019

of = observed frequency

ef = expected frequency

$X^2$  = Chi-square

$$X^2 = \frac{(of-ef)^2}{ef}$$

Where:

of is the observed frequency of the number of males and females that agreed, disagreed and are undecided on the issue

ef is the expected frequency of the number of males and females that agreed, disagreed and are undecided on the issue.

$x^2$  Value Calculated = 7.069

To find degree of freedom

$$df = (R-1) (C-1)$$

$$(3-1) (2-1)$$

$$3 \times 1$$

$$df = 3$$

Level of significant =5% = 0.05

At 3 Significant Level, the table value is 7.815.

**Decision Rule:** Reject  $H_0$  if the  $x^2$  calculated is greater than the table value and vice versa. Since the calculated value (7.079) is less than the table value (7.815), the null hypothesis was accepted and the alternate rejected. This therefore means that employees will not intend to leave when they have good interaction with their supervisors.

### Hypothesis 3

**Hi:** Employees will intend to leave when they have support from their co-workers.

**Ho:** Employee will not intend to leave when they have support from their co-workers.

**Tested Data:** Data Collected and presented in table 9 was used to calculate the expected frequency.

**Table 9:** Whether employees will intend to leave when they have support from their co-workers

Responses	Frequency	Percentage
Agreed	86	28.5
Disagreed	195	64.6
Total	21	6.9
	302	100

**Sources:** Field Survey, 2019

The table shows the response of the respondents on whether respondent agree that employees will intend to leave when they have support from their co-workers. 86 respondents representing

28.5 percent agreed that employee will intend to leave when they have support from their co-workers. 195 respondent representing 64.6 percent disagree while 21 representing 6.9 percent were undecided on the issue

**Table 10: Contingency**

Responses	Male	Female	Total
Agreed	58(52.8)	21(26.2)	79
Disagreed	128(129.1)	65(63.9)	193
Total	16(20.1)	14(9.9)	30
	202	100	302

Source: Author's computation, 2019

58 is the observed frequency of the number of males that agreed, while 52.8 is the expected frequency. 21 is the observed frequency of the number of females that agreed, while 26.2 is the expected frequency. 128 is the observed frequency of the number of males that disagreed while 129.1 is the expected frequency. 65 is the observed frequency of the number of female respondents that disagreed, while 63.9 is the expected frequency. 16 is the observed frequency of the males that were undecided while 20.1 was the expected frequency. 14 is the observed frequency of the female respondents that were undecided while 9.9 is the expected frequency.

Expected frequency calculation

$$\text{Expected frequency} = \frac{\text{Roll Total} \times \text{Column Total}}{\text{Grand Total}}$$

$$\text{Roll 1 cell 1} \quad 202 \times 79 \div 302 = 52.8$$

$$\text{Roll 1 cell 2} \quad 100 \times 79 \div 302 = 26.2$$

$$\text{Roll 2 cell 1} \quad 202 \times 193 \div 302 = 129.1$$

$$\text{Roll 2 cell 2} \quad 100 \times 193 \div 302 = 63.9$$

$$\text{Roll 3 cell 1} \quad 202 \times 30 \div 302 = 20.1$$

$$\text{Roll 3 cell 2} \quad 100 \times 30 \div 302 = 9.9$$

**Table 11: Chi- Square**

Of	ef	( of- ef )	( of – ef ) <sup>2</sup>	$\frac{(\text{of} - \text{ef})^2}{\text{ef}}$
58	52.8	5.2	27.04	0.5121
21	26.2	-5.2	27.04	1.0306
128	129.1	-1.1	1.21	0.0094
65	63.9	1.1	1.21	0.0189
16	20.1	-4.1	16.81	0.8363
14	9.9	4.1	16.81	1.6979
302				4.1052

Source: Author's computation, 2019

of = observed frequency

$$\begin{aligned} ef &= \text{expected frequency} \\ X^2 &= \text{Chi-square} \\ X^2 &= \frac{(\text{of-ef})^2}{ef} \end{aligned}$$

Where:

of is the observed frequency of the number of males and females that agreed, disagreed and are undecided on the issue

ef is the expected frequency of the number of males and females that agreed, disagreed and are undecided on the issue.

$x^2$  Value Calculated = 4.1052

To find degree of freedom

$$df = (R-1) (C-1)$$

$$(3-1) (2-1)$$

$$3 \times 1$$

$$df = 3$$

Level of significant = 5% = 0.05

At 3 Significant Level, the table value is 7.815.

**Decision Rule:** Reject  $H_0$  if the  $x^2$  calculated is greater than the table value and vice versa. Since the calculated value (4.105) is less than the table value (7.815), the null hypothesis was accepted and the alternate rejected. This therefore means that the employee will not intend to leave when they have support from their co-workers.

#### **. Hypothesis 4**

**H1:** Employee will intend to leave when they have support from their supervisors.

**H0:** Employee will not intend to leave when they have support from their supervisors.

**Tested Data:** Data Collected and presented in table 12 was used to calculate the expected frequency.

**Table 12:** Whether respondents agree that employees will intend to leave when they have support from their supervisor.

Responses	Frequency	Percentage
Agreed	80	26.5
Disagreed	192	63.6
Undecided	30	9.9
Total	302	100

Sources: Field Survey 2019

The table shows the response of the respondents on whether respondents agree that employee will intend to leave when they have support from their supervisors. 80 respondents representing 26.5 percent agreed that employee will intend to leave when they have support of their supervisor. 192 respondents representing 63.6 percent disagreed while 30 respondents representing 9.9 percent were undecided in the issue.

Table 13: Contingency

Responses	Male	Female	Total
Agreed	62(58.8)	26(29.1)	88
Disagreed	120(119.1)	58(58.9)	178
Undecided	20(24.1)	16(11.9)	36
Total	202	100	302

Source: Author's computation, 2019

62 is the observed frequency of the number of males that agreed, while 58.8 is the expected frequency. 26 is the observed frequency of the number of females that agreed, while 29.1 is the expected frequency. 120 is the observed frequency of the number of males that disagreed while 119.1 is the expected frequency. 58 is the observed frequency of the number of female respondents that disagreed, while 58.9 is the expected frequency. 20 is the observed frequency of the males that were undecided while 24.1 was the expected frequency. 16 is the observed frequency of the female respondents that were undecided while 11.9 is the expected frequency.

Expected frequency calculation

$$\text{Expected frequency} = \frac{\text{Roll Total} \times \text{Column Total}}{\text{Grand Total}}$$

Roll 1 cell 1       $202 \times 88 \div 302 = 58.8$

Roll 1 cell 2       $100 \times 88 \div 302 = 29.1$

Roll 2 cell 1       $202 \times 178 \div 302 = 119.1$

Roll 2 cell 2       $100 \times 178 \div 302 = 58.9$

Roll 3 cell 1       $202 \times 36 \div 302 = 24.1$

Roll 3 cell 2       $100 \times 36 \div 302 = 11.9$

**Table 14: Chi-square**

of	Ef	( of- ef )	( of – ef ) <sup>2</sup>	$\frac{(of - ef)^2}{ef}$
62	58.8	3.2	10.24	0.1741
26	29.1	-3.1	9.61	0.3302
120	119.1	0.9	0.81	0.0068
58	58.9	-0.9	0.81	0.0137
20	24.1	-4.1	16.81	0.6975
16	11.9	4.1	16.81	1.4126
302				2.6348

Source: Author's computation, 2019

of = observed frequency

ef = expected frequency

X<sup>2</sup> = Chi-square

$$X^2 = \frac{(of-ef)^2}{ef}$$

Where:

of is the observed frequency of the number of males and females that agreed, disagreed and are undecided on the issue

ef is the expected frequency of the number of males and females that agreed, disagreed and are undecided on the issue.

X<sup>2</sup> value calculated = 2.635

To find degree of freedom

df = (R-1) (C-1)

(3-1) (2-1)

3×1

df = 3

At 3 significant level, the table value is 7.815

**Decision Rule:** Reject Ho if the x<sup>2</sup> calculated value is greater than the table value and vice versa. Since the calculated value (2.635) is less than the table value (7.815), the null hypothesis was accepted and the alternate rejected. This therefore means that employees will not intend to leave when they have support from their supervisor.

### SUMMARY OF FINDINGS

The result showed that the entire four hypotheses were accepted while the alternate hypotheses were rejected.



**Four findings were revealed from the results which showed that:**

- i. Employees will not intend to leave when they have good interaction with their co-workers.
- ii. Employees will not intend to leave when they have good interaction with their supervisors.
- iii. Employees will not intend to leave when they have support from their co-workers.
- iv. Employees will not intend to leave when they have support from their supervisors.

Chi-Square statistical Analysis showed that Co-worker Relationship has significant influence on employee turnover intention at 5% level of significance. Employees will not turnover when all issues concerning co-worker relationship is given proper attention and resolved.

**CONCLUSION**

The objective of this research is to examine the influence of co-worker relationship on employees turnover intention in food in Beverage Industry in Nigeria. To execute this research goal, four objectives were raised from four research questions drawn, and four hypotheses were also formulated and tested. Based on the results from the test of the four hypotheses, it is concluded that co-worker relationship has significant influence on employee turnover intention. And employees will not turnover when all issues concerning co-worker relationship is given proper attention and resolved.

**RECOMMENDATIONS**

The following recommendations were made based on the research findings.

1. It is recommended that employees should interact fully with their co-workers to obtain necessary support during task accomplishment.
2. It is recommended that employees should interact fully with their supervisors to get the necessary assistance and support with which they can increase the ability to hope with their work and decreased turnover intention.
3. It is recommended that co-worker relation should encompass effective support such as liking and respect.
4. It is recommended that co-worker relation should encompass direct help to employees such as aid in work, giving information, and giving money.

**Limitations of the Study**

- i. The sample size of the study was constrained due to the inability of the respondents to voluntarily participate in the survey. In addition, the non inclusion of all Bottling companies in Nigeria would also reduce the sample size of the study.
- ii. The usage of survey research instrument was usually constraint with poor response and this ultimately affects the sample size. Also the reluctant of respondents to answer the questionnaire in the process of data collection, due to fear of victimization by those in authority was another limitation of the study.

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## **An Analysis of Factors Influencing Income of Households Producing Lychee Bearing Geographical Indications in VIETNAM**

**Dr. Nguyen Quang Hau**

Hoa Binh University, Viet Nam

**Dr. Le Thi Yen**

Thai Nguyen University of Economics and Business Administration, Vietnam

### **Abstract**

This study was conducted to analyze the factors influencing the income of households producing products bearing geographical indications in Vietnam. Data for the study were collected from a survey of 188 households growing lychee bearing geographical indications in Vietnam. Using OLS regression model to analyze the influence level of factors. Research findings show that, the number of household labor, selling price, investment capital ....Factors affecting the income of households producing lychee products bearing geographical indications in Vietnam. Research findings are used as a basis for proposing recommendations to improve the income of households producing lychee with geographical indications in Vietnam.

**Keywords:** Income, production households, lychee, GIs.

### **1. Introduction**

Vietnam is a country which have a agriculture commodities diversity and to be favoured by nature with the development of products along with the quality of products, it has contributed to promoting the general economic development of Vietnam.

However, besides the achievements, agriculture still exists and limited: the forms of organization of production is slow to reform; agricultural production in many places is still fragmented, lack of links; rural environmental pollution in many places is still serious; life of a part of people, especially in remote areas still difficult; food safety and hygiene is still a pressing issue; unsustainable agricultural and rural industries, difficulties in the context of international economic integration

In that context, agricultural development orientation needs to take into account the appropriate access strategies, focusing on two main development axes:1) production and market access for agricultural products in large numbers and popularity, applied science and technology, advantages in large-scale goods producing ; 2) produce and access markets with traditional, specialty products, quality and high added value based on regional advantages, cultural traditions and the accumulation of skills of the people. Along with each orientation are different

solutions that can promote commercial development, use appropriate measures for the protection of intellectual property to support the sustainable development of agricultural commodities

Vietnam has focused on developing strategic product bearing the geographical indication as a solution to build a brand for agricultural products, improve the value and effectiveness of agricultural production, as of December 30, 2016, Vietnam has protected 48 geographical indications, including 4 geographical indications of foreign countries and 44 geographical indications of Vietnam

Lychee bearing geographical indications is one of Vietnam's typical agricultural products, local people have the main source of income from this tree. Therefore, how to develop this product to increase the income of people is a question that must be solved not only by policy makers, researchers but also the research object is the producer of these products. Therefore, this study was conducted to analyze the factors influencing income of households producing lychee bearing geographical indications in Vietnam.

## **2. Overview of research**

The influencing of factors on income of households has been approached under different view, specifically:

Dominique Barjolle et al (2009) focused on methods to assess the impact of territorial geographical indications (economic, social and environmental), the results show that economic benefits are the only engine in implementing product protection projects with geographical indications. The results show that these economic benefits are only the purpose in implementing product protection projects with geographical indications.

Or in view of the Carina Folkesson (2005) the authors consider the economic impact of the geographical indication to be the manufacturer. The research findings also show that the production of products bearing geographical indications in the EU has in many cases contributed to rural development, although the development is different between regions and different products. The study also concluded that statutory protection is necessary for benefits arising from the production of geographical indications to benefit producers and related actors. The research results show that Basmati rice is more profitable than other crops, after that, the author studies the factors affecting the decision to produce products bearing geographical indications, one of the number of factors mentioned is the ability to access policies and the number of workers in the household.

Pradyot R. Jena, Ulrike Grote, (2010) used data from a survey of 300 rice farmers in a province of northern India namely Uttarakhand. In the study, the author analyzes the total profit, determines the net benefits of Basmati rice bearing geographical indications with other plants in the same locality but does not have a production certificate with specific geographical indications. The author chooses crops that do not have geographic indications certification as sugarcane.... Simultaneously, the author has used the marginal benefit analysis method as a basis for conducting this research, straight line regression (OLS) used by the author to analyze the impact of geographical indications.

Le Dinh Thang (1993), Nguyen Sinh Cuc (2001) in their research, there were opinions about production households, each study has different specific views about production households, but in common, it is agreed that production households are units which participate in the production of mining activities, processing products related to agriculture.

Some other studies conducted to determine the factors affecting the income of households in

specific areas, in different localities such as: Nguyen Quoc Nghi et al (2011), Nguyen Van Thieu et al (2011), Nguyen Van Toan et al (2012), Huynh Thi Dan Xuan (2012), Nguyen Thi Hong Hanh et al (2013) ...Primary data is also selected by the authors for their research, this is also the most obvious similarity to the studies related to considering factors affecting household incomes, specifically here are the farm households agricultural production studied by the authors. The purpose of the studies: to determine the average income of households, and the factors affecting household income, the relationship between them. With the data collected, the author conducted the analysis using descriptive modeling and statistical methods, the models used were OLS models, this is a model which is relatively popular with research in Vietnam regarding factors affecting household's income in different fields

### **3. Research Methodology**

#### **3.1. Data collection methods**

Data information serves for statistical analysis in this chapter was collected from the research team interviewed households by using standardized questionnaires.

Time for survey: From January 2018 to the end of May 2018.

+) Number of samples:

There are many different concepts about the sample, according to Hoelter (1983), the critical sample size must be 200. Nunnally and Burnstein (1994) suggest that with the Maximum Likelihood (ML) estimation method, the sample size must be at least 100-150.

From Nguyen Van Thang's point of view (2014), the minimum number of samples that can perform statistical operations is 100.

Accordingly, the authors conducted a survey after cleaning ensures data and minimum number of samples collected to perform statistical calculations of 100 observations for the study

The author conducted a survey with 300 representatives of households. After collecting survey questionnaires, input data into excel software, the author removes the survey forms that do not meet the requirements of data for the research, retains the completed questionnaires to request information to perform statistical analysis. 188 surveys were clean and meet the performance requirements of statistical analysis, the authors used observations performed 188 analyzes for the study, number of observations meet the requirements for the minimum number of observations to study the implementation of statistical analysis

#### **3.2. Data analysis methods**

Data after being collected will be imported into excel software, then with the help of SPSS20.0 software, the author performs OLS regression to analyze the influence level of factors to the income of households producing lychee products bearing geographical indications.

### **4. Finding**

The author regresses the model to assess the influence of some factors on the income of households producing lychee products bearing geographical indications as follows:

\*) Check the relevance of the model

With the proposed research model, the author conducts the verification of the appropriateness of regression form and some model defects.

Specific test results:

**Table 1: Results of conformity testing and some model defects**

Model Summary <sup>b</sup>										
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.886 <sup>a</sup>	.785	.780	46.284	.785	166.792	4	183	.000	2.024
a. Predictors: (Constant), Chi_phi, Hoc_van, SL_LD, Gia_ban										
b. Dependent Variable: Thu_nhap										

Source: Analysis results from the author's research data

With R Square coefficient = 0.785 indicates that the independent variables in the model explain 78.5% of the dependent variable.

The test results show that the author model is relatively good when there is no defect in autocorrelation in the model, and the independent variables explain 78.5% of the dependent variable.

**Table 2: Results of conformity testing and some model defects**

ANOVA <sup>a</sup>						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	1429238.675	4	357309.669	166.792	.000 <sup>b</sup>
	Residual	392032.198	183	2142.252		
	Total	1821270.872	187			
a. Dependent Variable: Thu_nhap						
b. Predictors: (Constant), Chi_phi, Hoc_van, SL_LD, Gia_ban						

Source: Analysis results from the author's research data

Results from table 2 show:

+) With Sig coefficient = 0.000; test F = 166,792, so the research linear regression model is appropriate.

From data collected through the interview process ..., combined with the help of SPSS 20.0 software. The author uses the least squares method to consider the influence of factors on the income of households producing lychee products bearing geographical indications:

**Table 3: Results of Regression model**

Coefficients <sup>a</sup>					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		

1	(Constant)	88.158	15.158		5.816	.000
	Hoc_van	-2.454	1.131	-.075	-2.170	.031
	SL_LD	9.880	1.099	.362	8.992	.000
	Gia_ban	6.153	.940	.495	6.548	.000
	Quy_mo_von	.209	.094	.163	2.215	.028
a. Dependent Variable: Thu_nhap						

Source: Analysis results from the author's research data

Through the table results in the factors,

Group of factors affecting the same direction to income include: number of workers in the household, selling price and investment capital. In which, the factor of number of employees in households seems to affect most on average income of households with a coefficient of 9.880. Group of factors negative effect to the average income: the education level of the household head, the coefficient of this variable is negative. Specifically, how each of these factors affect the average income of households producing lychee products analyzed by the author below:

+) Number of workers in the household:

The factor of number of household workers positively affects the income of households producing lychee products, the coefficient of this variable is 9.880 with 99% significance level (sig. = 0.001 <0.01). Specifically, when the number of workers in the household increases by 1, the average income of households producing lychee products increases by 9.880% (according to the standardized beta coefficient)

This result is consistent with the viewpoint: Under less mechanized production conditions, the number of employees will be a key factor to increase household income of Abdulai&CroleRees, 2001; Yang, 2004. For producing lychee products is an agricultural product, labor is an essential element because the steps from care to collection need to be used for labor such as: pruning trees when the season ends clean the leaves, soil improvement, clean the weeds under the trees and collecting the entire crop residues on the focal point for limiting pest refuges, ... Therefore, a lot of workers will help create better care for the garden, improve the productivity of lychee

+) Price:

Research results show that the selling price factor positively affects the income of households producing lychee products, the coefficient of this variable is 6.153 with a 99% significance level (sig. = 0,000 <0.05). Specifically, when the price increases by 1, the average income of households producing lychee products increases 6.153% (according to the standardized beta coefficient).

The selling price of products relatively large impact to household income producing products with geographical indications, if the price is not stable, At the beginning and at the end of crop, the price is high, at the main crop the lychee 's price is low, the price difference between Luc Ngan lychee area with other districts in the province or with other provinces does not lead to insecure income for farmers.

+) Investment capital:

The factor of investment capital has the same impact to the income of households producing lychee products, the coefficient of this variable is 0.209 at the 95% significance level (sig. = 0.028 <0.01). Specifically, when the investment capital of households increases by 1, the average



income of households producing lychee products increases by 0.209% (according to the standardized beta coefficient).

One of the important factors in production and business is a must stable capital, capital needed for new technology application, fertilizer purchase as well as labor cost ... When lychee products are bought by customers and the demand increases, business households tend to improve or expand their land, however, for this product, it requires long-term investment to improve the quality as well as productivity,

Because this is a seasonal product, only once a year, so to invest in renovating or growing it takes a lot of time and effort. Investment capital can be obtained from equity or credit.

However, the equity of the households is only enough to cover a part of the costs, the remaining investment capital is mainly borrowed from credit, so the loan is very important for the households. When households are supported with good loans, business households have capital to invest in machinery, technology, expand production, income will increase. This result is consistent with the research of Huynh Thi Dan Xuan and Mai Van Nam (2011), Nguyen Quoc Nghi et al (2011).

+) Education level:

The research results show that the educational level has a negative impact on the income of households producing lychee products, the coefficient of this variable is -2.454 with the significance level of 95% (sig. = 0.031 < 0.01) . Specifically, when the education level increased by 1, the average income of households producing lychee products decreased 0.424% (according to the standardized beta coefficient)

This result is the opposite with the views of Foster & Rosenzweig, 1996; Pitt & Sumodiningrat, 1991; Yang, 2004: education determines the advantages of each person in creating income by high education that is receptive, apply new techniques to production and efficient use of other resources. Besides, education also enhances the ability to capture and process market information to create opportunities to participate in non-farm activities, thereby increasing income. And also does not support the views of author Nguyen Quoc Nghi et al (2011), The education level of the household head is positively related to household income, meaning that the higher the education level, the more income the people have

However, as analyzed, lychee products are agricultural products and have been on the market for many years, not a new product. It is also a reason that the education level has no positive impact on income. The most important agricultural work is experience, "experience is better than cleverness", especially with lychee fruit, farmers need to have practical knowledge to deal with plant diseases, which season should fertilize fertilizer, which period should spray pesticides and growth regulators suitable for lychee...High level of education, a lot of knowledge but rarely practice, rarely working when embarking on to practice is embarrassing, inexperienced leading to failure.

## **5. Conclusion**

This research was conducted to analyze factors influencing income of households producing lychee bearing geographical indications in VietNam. The research findings are the foundation for helping policy makers to use as a base to proposed policy recommendations for the country, local to develop products with geographical indications. At the same time, research is also useful reference works for students in economic majors which can be used for reference. However, in the future, if it is possible expand the scope of the study with other products bearing geographical indications, Research findings will be better.

## **6. Recommendations**

To increase the income of lychee farmers bearing geographical indications in Vietnam, some proposed solutions are as follows:

Training courses on processing and preserving lychee products need to be organized from which can choose a wider range of product consumption methods more diverse for producers.

Training for households producing/ farmers who growing agricultural products about market development skills

When skilled in market development and exposure to customer needs for products, producers will know what customer requirements about their products and will adjust to suit the tastes and meet market demand: including in both quality as well as requirements when packaging and harvesting products.

Strengthening support from competent state agencies to support people in credit loans, market access, rational use of resources in production and business of households, lychee growers to avoid input resource wasting.

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